

# Discovery AO Highlights and Science Evaluation

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# 2004 Discovery AO

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Mission investigations must be appropriately scoped

Mission proposals must include adequate reserve

Remember the value to the taxpayers



# AO Highlights

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## Discovery Missions

- Complete scientific investigations
- \$360 M cost cap (FY04\$), including a minimum of 25% reserve
- Free-flyers on Delta ITH or smaller ELVs
- Must include analysis and publication of data in the peer reviewed scientific literature, delivery of the data to the PDS in proper format, and full E/PO program, funded at 1-2% of the NASA OSS Cost

## Missions of Opportunity

- Three options for scientific investigations as part of other missions
- \$35 M cost cap (FY04\$), including 25% reserve

Launch date NLT December 31, 2009



# AO Highlights

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All Investigations must support the science themes

- Solar System Exploration (excluding the study of Mars)
- Astronomical Search for Origins (the search for extrasolar planetary systems element ONLY)

All investigations must be PI-led

- Project Manager must be named at proposal
- Deputy Project Manager is encouraged but not required

All investigations must be scoped to fit within the cost cap

- Propose only the science that can be done for the \$
- Incorporate appropriate reserves, project management techniques



# AO Highlights

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## Appropriate scope

- Include a baseline mission, descope options, and performance floor

## Co-Investigators

- Only those who play a necessary role in the investigation

## Other Ways to Involve Taxpayers

- Education and Public Outreach
- Small Disadvantaged Business
- Participating Scientist Programs
- Data Analysis Programs
- Guest Observer Programs



# AO Highlights

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## Technology

- RHUs are allowed; RTGs and potential new “mini-RTGs” are NOT.

## Financial

- Use the NASA New Start Inflation Index, Table B-3
- Contributions are allowed, subject to the limitations in Section 5.9.3
- Total contributions may not exceed 1/3 of the Total Cost

## Other Resources

- Discovery Program Library, AO Q&A pages

NOIs are due May 14, 2004



# New in this AO

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All projects must show at least a 25% reserve

- At proposal
- Through the end of Phase A / Selection
- Through the end of Phase B / Confirmation

New opportunities to involve other scientists

- Guest Observer Programs may be proposed

New types of missions of opportunity

- Extended missions
- New science missions



# New in this AO

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## Project management

- Not limited to JPL and GSFC
- Not limited to NASA Centers

## Project manager must be named

- Replacement of PM, Deputy PM, PI, or Deputy PI requires HQ concurrence

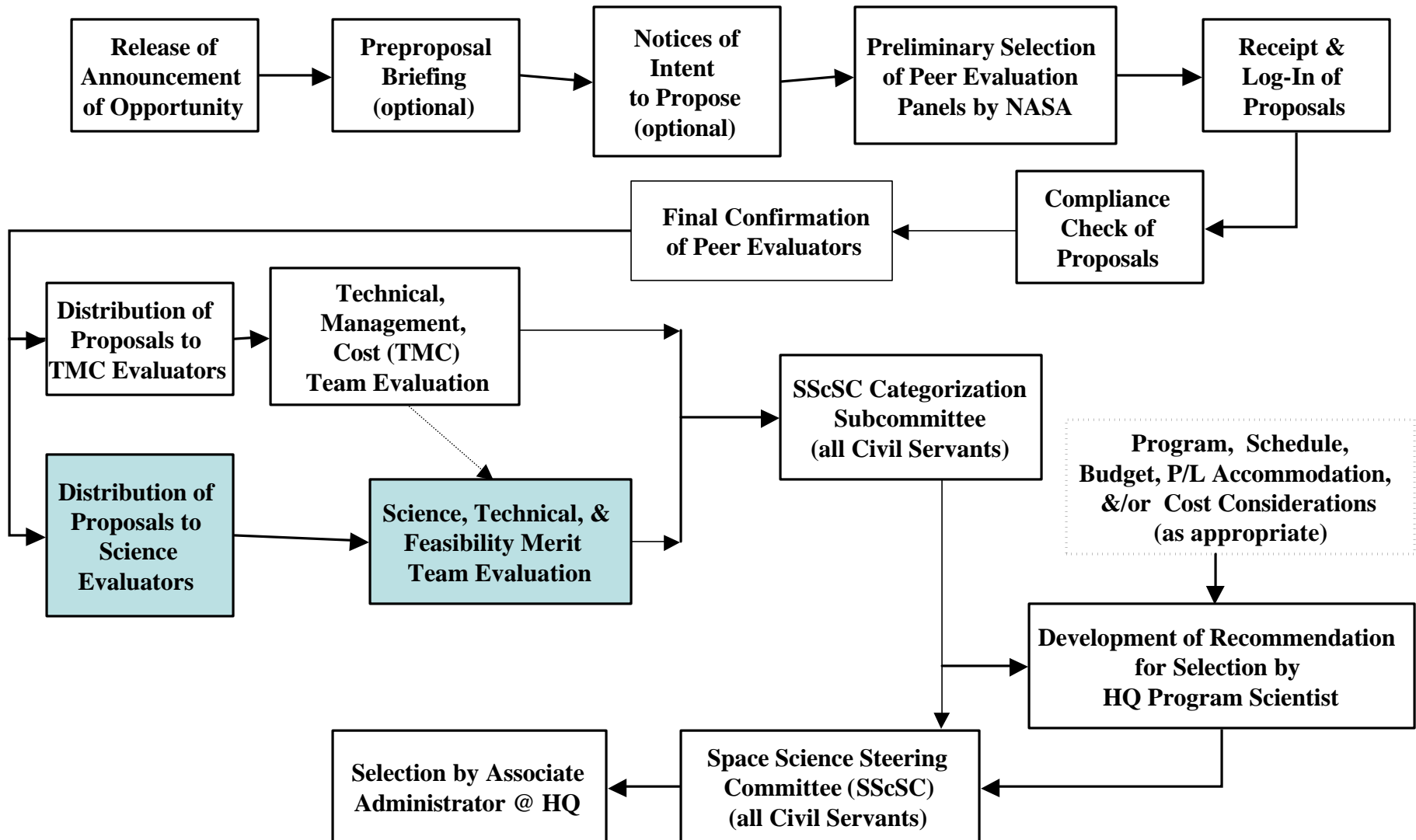
## Program management at HQ, JPL

- New Discovery/NF Program Director: Andy Dantzler
- New Discovery/NF Program Manager: John McNamee

## Compliance checklist (Appendix G)



# AO Proposal Evaluation & Selection Process





# Discovery Program Principles

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High Quality Planetary System(s) Science

- Complement NASA/OSS Strategic Plans

Frequent Access to Space

- Cost Capped Environment

Complete, PI-led Investigations

- Cradle to grave planning

Community Involvement and Outreach

- Co-Is, PSPs, DAPs, GOs, SDBs, E/PO....



# Science Evaluation Principles

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High Quality Planetary System(s) Science

- Complement NASA/OSS Strategic Plans

Enables Frequent Access to Space

- **Focused scientific investigations**

Complete, PI-led Investigations

- Cradle to grave planning

Community Involvement and Outreach

- Co-Is, PSPs, DAPs, GOs, SDBs, E/PO....



# Proposal Evaluation Criteria

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## Evaluation Criteria

- Scientific merit (40%)
- Technical merit and feasibility (30%)
- Feasibility of implementation approach, including cost risk and subcontracting plans (30%)
- Note: Any MO data-buy only proposals will be subject to weightings of 60%, 40%, and 0%, respectively

## Additional Selection Factors

- Cost and associated reserve
- E/PO and SDB commitment



# Science Evaluation Process

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## Reviewer Selection

- Nonconflicted reviewers: no institutional ties, no Co-Is, no collaborators
- Highly qualified in their area of expertise
- Able to consider well-written proposals slightly outside their expertise

## Proposal Reviews

- All reviewers receive paper and CD copies to review
- Each reviewer evaluates each proposal individually; submit via web
- In-person review with plenary meetings

Result: Consensus Evaluations, used in Categorization



# Anticipated Selections

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Approximately three Missions will be selected for Concept Studies

- Up to 6 month Phase A
- Up to \$1M (RY\$)

One or more Missions of Opportunity may be selected

- Up to 6 month Phase A
- Up to \$250k (RY\$)

After evaluation of the Phase A Concept Studies, one Discovery Mission and possibly one or more MO investigations may continue into Phase B



# 2004 Discovery AO

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Mission investigations must be appropriately scoped

- Focused scientific investigations
- Do not propose a flagship mission to this AO

Mission proposals must include adequate reserve

- Your team must decide what that is, based on your assessment of risk
- A minimum of 25% reserve is required

Value to the taxpayers

- Involve community through open competitions (PSP, GO, EPO)
- Promptly archive data in the PDS
- Publish results in peer-reviewed literature and outreach efforts